

WE CLAIM:

Sub 1

1. A method for providing a user with access to selected ones of a plurality of target objects and sets of target object characteristics that are accessible via an electronic storage media, where said users are connected via user terminals and data communication connections to a target server system which includes said electronic storage media, said method comprising the steps of:

5 automatically generating target profiles for target objects and sets of target object characteristics stored in said electronic storage media, each of said target profiles being generated from the contents of an associated one of said target objects and sets of target object characteristics;

10 automatically generating at least one user target profile interest summary for a user at a user terminal, each said user target profile interest summary being generated from ones of said target objects and sets of target object characteristics accessed by said user; and

15 enabling access to said plurality of target objects and sets of target object characteristics stored on said electronic storage media by users via said target profiles.

2. The method of claim 1 wherein said step of enabling access comprises: correlating said user target profile interest summaries, generated for an identified user, with said generated target profiles to identify ones of said plurality of target objects and sets of target object characteristics stored on said electronic storage media that are likely to be of interest to said identified user.

3. The method of claim 2 wherein said step of enabling access further comprises: transmitting a list, that identifies at least one of said identified ones of said plurality of target objects and sets of target object characteristics, to said identified user; and

5 providing access to a selected one of said plurality of target objects and sets of target object characteristics stored on said electronic storage media in response to said identified user selecting an item from said list.

4. The method of claim 3 wherein said step of providing access comprises:

transmitting data, in response to said identified user activating a one of said user terminals to identify said selected item on said list, indicative of said identified user's selection of said selected item from said one user terminal to said target server via a one of said data communication connections.

5. The method of claim 4 wherein said step of providing access further comprises:

retrieving, in response to receipt of said data from said one user terminal, a target object identified by said selected item from said electronic storage media; and

5 transmitting said retrieved target object to said one user terminal for display thereon to said identified user.

6. The method of claim 2 wherein said step of enabling access further comprises: transmitting at least one of said identified ones of said plurality of target objects and sets of target object characteristics, to said identified user in advance of said user requesting said at least one of said identified ones of said plurality of target objects and sets of target object characteristics.

7. The method of claim 2 wherein said step of enabling access further comprises: transmitting a list, that identifies at least one of said identified ones of said plurality of target objects and sets of target object characteristics, to said identified user; and

5 transmitting said identified ones of said plurality of target objects and sets of target object characteristics stored on said electronic storage media from said target server system to a designated server located closer via said electronic communications connections to said user terminal than said target server system.

8. The method of claim 7 wherein said step of providing access comprises: transmitting data, in response to said identified user activating a one of said user terminals to identify said selected item on said list, indicative of said identified user's selection of said selected item from said one user terminal to said designated server via a one of said data communication connections.

9. The method of claim 8 wherein said step of providing access further comprises:

retrieving, in response to receipt of said data from said one user terminal, a target object identified by said selected item from said designated server; and

5 transmitting said retrieved target object to said one user terminal for display thereon to said identified user.

10. The method of claim 1 wherein said target object is a document having at least one page, said step of enabling access comprises:

automatically generating a user target profile interest summary for an identified user that is indicative of target objects and sets of target object characteristics retrieved
5 by said identified user as well as the number of pages of said retrieved documents accessed by said identified user.

11. The method of claim 10 wherein said automatically generated user target profile interest summaries are also indicative of a length of time said identified user accessed said retrieved target objects and sets of target object characteristics.

12. The method of claim 1 wherein said step of automatically generating target profiles comprises:

automatically generating a hierarchical menu that directs said users to at least a subset of said plurality of target objects and sets of target object characteristics stored on
5 said electronic media, comprising:

sorting all target objects and sets of target object characteristics in said subset into a plurality of clusters of target objects and sets of target object characteristics based on an empirical measure of similarity of content of said target objects and sets of target object characteristics, and

10 generating a hierarchical menu that identifies a content in common of target objects and sets of target object characteristics sorted into each of said plurality of clusters, to enable said identified user to identify ones of said plurality of target objects and sets of target object characteristics stored on said electronic storage media that are likely to be of interest to said identified user.

13. The method of claim 12 wherein said step of automatically generating a hierarchical menu further comprises:

ascribing a cluster profile to each of said plurality of clusters.

14. The method of claim 12 wherein said step of sorting comprises:

dividing said plurality of target objects and sets of target object characteristics into at least two clusters based upon said empirical measure of similarity of content of said target objects and sets of target object characteristics,

5 subdividing each of said at least two clusters into at least two subclusters based upon said empirical measure of similarity of content of said target objects and sets of target object characteristics, and

repeating said step of subdividing to produce a multi-level hierarchy of identified clusters.

15. The method of claim 14 wherein said step of generating a hierarchical menu comprises:

ascribing a cluster profile to each cluster produced by all steps of dividing and subdividing in said step of sorting.

16. The method of claim 15 wherein said step of ascribing comprises:

identifying at least one term in said generated target profiles produced for ones of said plurality of target objects and sets of target object characteristics sorted into a cluster that is indicative of the target content of said ones of said plurality of target objects and

5 sets of target object characteristics sorted into said cluster.

17. The method of claim 15 wherein said step of ascribing comprises:

selecting at least one target object of said ones of said plurality of target objects and sets of target object characteristics sorted into said cluster that are closest to the center of the cluster, and

5 ascribing a cluster profile that is indicative of the target content of said ones of said plurality of target objects and sets of target object characteristics sorted into said cluster, said cluster profile comprising elements of at least one of: a title of said selected at least one target object and sets of target object characteristics, and a set of words contained in

the target profile of said selected at least one target object cluster which have the highest
10 relative frequency.

18. Apparatus for providing a user with access to selected ones of a plurality of
target objects and sets of target object characteristics that are accessible via an electronic
storage media, where said users are connected via user terminals and data communication
connections to a target server system which includes said electronic storage media,
5 comprising:

means for automatically generating target profiles for target objects and sets of
target object characteristics stored in said electronic storage media, each of said target
profiles being generated from the contents of an associated one of said target objects and
sets of target object characteristics;

10 means for automatically generating at least one user target profile interest summary
for a user at a user terminal, each said user target profile interest summary being
generated from ones of said target objects and sets of target object characteristics accessed
by said user; and

means for enabling access to said plurality of target objects and sets of target object
15 characteristics stored on said electronic storage media by users via said target profiles.

19. The apparatus of claim 18 wherein said means for enabling access comprises:
means for correlating a user target profile interest summary, generated for an
identified user, with said generated target profiles to identify ones of said plurality of
target objects and sets of target object characteristics stored on said electronic storage
5 media that are likely to be of interest to said identified user.

20. The apparatus of claim 19 wherein said means for enabling access further
comprises:

means for transmitting a list, that identifies at least one of said identified ones of
said plurality of target objects and sets of target object characteristics, to said identified
5 user; and

means for providing access to a selected one of said plurality of target objects and
sets of target object characteristics stored on said electronic storage media in response to
said identified user selecting an item from said list.

21. The apparatus of claim 20 wherein said means for providing access comprises:

means for transmitting data, in response to said identified user activating a one of said user terminals to identify said selected item on said list, indicative of said identified user's selection of said selected item from said one user terminal to said target server via a one of said data communication connections.

22. The apparatus of claim 21 wherein said means for providing access further comprises:

means for retrieving, in response to receipt of said data from said one user terminal, a target object identified by said selected item from said electronic storage media; and

means for transmitting said retrieved target object to said one user terminal for display thereon to said identified user.

23. The apparatus of claim 19 wherein said means for enabling access further comprises:

means for transmitting at least one of said identified ones of said plurality of target objects and sets of target object characteristics, to said identified user in advance of said user requesting said at least one of said identified ones of said plurality of target objects and sets of target object characteristics.

24. The apparatus of claim 19 wherein said means for enabling access further comprises:

means for transmitting a list, that identifies at least one of said identified ones of said plurality of target objects and sets of target object characteristics, to said identified user; and

means for transmitting said identified ones of said plurality of target objects and sets of target object characteristics stored on said electronic storage media from said target server system to a designated server located closer via said electronic communications connections to said user terminal than said target server system.

25. The apparatus of claim 24 wherein said means for providing access comprises:

means for transmitting data, in response to said identified user activating a one of said user terminals to identify said selected item on said list, indicative of said identified user's selection of said selected item from said one user terminal to said designated server via a one of said data communication connections.

26. The apparatus of claim 25 wherein said means for providing access further comprises:

means for retrieving, in response to receipt of said data from said one user terminal, a target object identified by said selected item from said designated server; and

means for transmitting said retrieved target object to said one user terminal for display thereon to said identified user.

27. The apparatus of claim 20 wherein said target object is a document having at least one page, said means for enabling access comprises:

means for automatically generating a user target profile interest summary for an identified user that is indicative of target objects and sets of target object characteristics retrieved by said identified user as well as the number of pages of said retrieved documents accessed by said identified user.

28. The apparatus of claim 27 wherein said automatically generated user target profile interest summary is also indicative of a length of time said identified user accessed said retrieved target objects and sets of target object characteristics.

29. The apparatus of claim 22 wherein said means for automatically generating target profiles comprises:

means for automatically generating a hierarchical menu that directs said users to at least a subset of said plurality of target objects and sets of target object characteristics stored on said electronic media, comprising:

means for sorting all target objects and sets of target object characteristics in said subset into a plurality of clusters of target objects and sets of target object

characteristics based on an empirical measure of similarity of content of said target objects and sets of target object characteristics, and

10 means for generating a hierarchical menu that identifies the content in common of target objects and sets of target object characteristics sorted into each of said plurality of clusters, to enable said identified user to identify ones of said plurality of target objects and sets of target object characteristics stored on said electronic storage media that are likely to be of interest to said identified user.

30. The apparatus of claim 29 wherein said means for automatically generating a hierarchical menu further comprises:

means for ascribing a cluster profile to each of said plurality of clusters.

31. The apparatus of claim 29 wherein said means for sorting comprises:

means for dividing said plurality of target objects and sets of target object characteristics into at least two clusters based upon said empirical measure of similarity of content of said target objects and sets of target object characteristics,

5 means for subdividing each of said at least two clusters into at least two subclusters based upon said empirical measure of similarity of content of said target objects and sets of target object characteristics, and

means for repeating said step of subdividing to produce a multi-level hierarchy of identified clusters.

32. The apparatus of claim 31 wherein said means for generating a hierarchical menu comprises:

means for ascribing a cluster profile to each cluster produced by all said means for dividing and subdividing.

33. The apparatus of claim 32 wherein said means for ascribing comprises:

means for identifying at least one term in said generated target profiles produced for ones of said plurality of target objects and sets of target object characteristics sorted into a cluster that is indicative of the target content of said ones of said plurality of target
5 objects and sets of target object characteristics sorted into said cluster.

34. The apparatus of claim 32 wherein said means for ascribing comprises:
means for selecting at least one target object of said ones of said plurality of target objects and sets of target object characteristics sorted into said cluster that are closest to the center of the cluster; and
means for ascribing a cluster profile that is indicative of the target content of said ones of said plurality of target objects and sets of target object characteristics sorted into said cluster, said cluster profile comprising elements of at least one of: a title of said selected at least one target object, and a set of words contained in the target profile of said selected at least one target object cluster which have the highest relative frequency.

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